

January 6, 1960

Mr. 

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Dear Dan:

Pursuant to our messages of October 16 and October 23, 1959, and your replies thereto dated October 23 and October 26, 1959, respectively, we are pleased to submit the following schedules:

1. Proposed revisions to the Work Statement accepted by us as Amendment No. 9 to Contract AF 33(600)-37230 on November 11, 1959.

2. Cost information which delineates the costs incidental to the increased work requirements established by the proposed Work Statement revisions. This cost information does not include any provision for field service support from Philadelphia, and incorporates changes in configuration for Units 9004 and 9005, and assumes that all units subsequent to Unit 9005 shall be to the configuration of Unit 9006.

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**CONTAINS SENSITIVE
COMPARTMENTED INFORMATION**


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EXHIBIT "A"
TO AMENDMENT NO. 12
AF33(600)-37230

A. Testing Program Subsequent to Vehicle 9003.

I. Itek - Fairchild

a. Post Flight Test Analysis Program

1. Environmental Test of Drive Motor and Lubricant.
2. Complete Package Test at Simulated Altitude.
3. Altitude Tests of HYAC Camera.
4. Trip Report to Eastman Kodak concerning Film Test.
5. Misalignment Test, Camera to Cassette.
6. Mechanically Induced Failure Test.
7. Film Shrinkage at Altitude.
8. Vapor Pressure Tests of Anderol X1101 Lubricant and 1158 Film.
9. Film Supply and Flexibility at Altitude.
10. Rapid Decompression Test.
11. Inland Torque Motor Test.
12. Reports of Visits re Lubricants at Altitude.
13. Investigation of Loss of Film Tension at Altitude.
14. Film Tension Control Circuit.
15. Further Investigation of Rubber Expansion.

b. System Mating Procedure and Interface Analysis

1. Altitude Sensitivity.
2. Voltage Variation.
3. Misalignment Limits.
4. Alignment Procedures.
5. C System Combination Minimum Temperature Limits.

Results of the investigations were presented to LMSS for use in the total system analysis.

c. Camera Altitude Test (Ambient Pressure 10^{-5} MM/HG or Lower)

c. Continued

System test during period 27 August 1959 to 20 November 1959 in the AVCO Test Chamber. A total of 14 tests were completed, including two 2-day tests and six 1-day tests, without failure.

d. Film Tests

1. Dynamic Tensile Strength.
2. Shock.
3. Static Tensile Strength.
4. Brittleness.
5. Tear Resistance.
6. Shrinkage.
7. Moisture Dynamics.
8. Sensitometry and Resolution.
9. Pressure Marking.
10. Dry Spool.

e. Clutch and Brake Properties at Altitude

A Series of tests will be conducted on the scan clutch to evaluate performance of the clutch and friction material at low atmospheric pressure. The tests will be instrumented to measure temperature rise in electro-magnetic coil and low pressure tests will be conducted through the range of probable voltages.

f. Miscellaneous Testing

Requalification testing in shock and vibration.

Camera Deformation Testing.

Cassette Testing.

II. LMSD

- a. Acceleration qualification and testing.
- b. Vibration qualification and testing.
- c. High altitude temperature simulation testing.
- d. Camera deformation testing.
- e. Thermal distortion.

f. Telemetering testing.

g. Antennae testing.

III. General Electric - Thiokol test program

B. Configuration Changes

I. Camera

- a. Add dancer rollers - input and exit.
- b. Add wide flange exit roller.
- c. Tie rod modification.
- d. High Temperature cassette motor.
- e. Add torque motor to supply spool.
- f. Modify supply puck.
- g. Add failure analysis telemetry instrumentation.
- h. Add dry nitrogen on pad.
- i. Modify wiring for pad checkout.
- j. Retrofit 9 cameras.

II. Nose Cone

- a. Add Blossom telemeter.
- b. Change beacon.
- c. Change flashing lights
- d. Change antennae.
- e. Change wiring harnesses.
- f. Add Duroid windows in ablative shell.
- g. Add failure analysis telemetry instrumentation.
- h. Change thermal batteries.
- i. Add nose cone heaters.
- j. Modify wiring for pad checkout.
- k. Modify aft cover.
- l. Modify recovery programmer.

- m. Modify thrust cone programmer.
- n. Modify parachute cover.
- o. Add thermal insulation between cassette fixture and recovery capsule.
- p. Add thermal insulation between recovery capsule and ablative shell.
- q. Retrofit 10 nose cones.

C. Delivery at

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2 June 1959

1 July 1959

1 Oct. 1959

1 Nov. 1959

2 Jan. 1960

2 Feb. 1960

2 March 1960

1 April 1960